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Use of online interactive tools in an open distance learning context: Health studies students' perspective☆

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ABSTRACT

Background: Open distance learning (ODL) institutions provide educational challenges with specific reference to the training of nurses. They have adopted online technologies to facilitate teaching and learning. However it is observed that most nurses do not use or minimally use tools such as a discussion forum for online interaction to facilitate teaching and learning.

Objective: The purpose of this study was to determine how the discussion forum as an online interactive tool be used in an ODL institution to enhance student-to-student and student-to-lecturer online interactions.

Design: Quantitative and descriptive in nature.

Method: No sampling was done. An online questionnaire was sent to all 410 second and third years Health Services Management students around the world registered with a specific ODL institution during the second semester. Eighty seven students responded to the questionnaire. Data analysis was done quantitatively and descriptively in the form of diagrams.

Results: The findings indicated that 84.9% of students own computers, and 100% own cellular phones, but only 3.8% participated in online discussion forum. Some students indicated that they were technologically challenged. Some lecturers interact minimally online and are not supportive to them. The institution does not give them the support they need to acquire the necessary skills to utilise these technologies.

Conclusion: The article suggests that lecturers, active interaction in an online discussion forum as a way of supporting students, are fundamental to effective teaching and learning. The university should consider providing intensive mentoring to students to enable them to utilise the available technologies optimally.

1. Introduction

Distance education is an important means for nursing knowledge to become widespread (Kantek, 2014). Distance learning, which is a formal or institutional education activity that brings together students, lecturers and education materials in different locations via interactive technologies, is a well-known education method that is used worldwide. In higher education, distance learning practices are based on interactive and information technologies therefore distance education is encountered as an education method that spreads more widely every day than previous traditional modes of teaching (Karaduman & Mencet, 2013).

Although distance learning is seen as a strategy for providing solutions to educational challenges such as insufficient lecturers, an increasing deficit of nurses and the unavailability of continuing education for nurses, the application of technology to facilitate teaching and learning remains a challenge to nurses (Kantek, 2014).

Open distance learning (ODL) institutions provide solutions to educational problems with specific reference to nurses in this article. These institutions have adopted online technologies to facilitate teaching and learning, and to enhance interactivity between students, students and lecturers, students and study material, and students and the ODL institution. Online discussion forums are critical in ODL because they allow students who cannot attend the educational institution to interact with one another. However, nurses do not use or minimally use the discussion forum tool for online communication. This article determines how the discussion forum as an online interactive tool can be used by Health Services Management (HSM) students in an ODL institution to enhance student-to-student, student-to-lecturer, student-to-study material and student-to-ODL institution communications.

2. Background

Technological advances have a huge impact on many aspects of our lives, including education. Over the past 20 years, many universities and educational institutions have been trying to find new ways and methods to use internet-based technologies successfully in teaching and learning through distance learning initiatives. Advances in interactive and educational technologies force us to change the existing teaching and learning paradigm (Altunisik, 2013).

Although distance learning practices are theoretically accepted as a model assisting in formal education, in-depth research must be conducted into the practices of both education systems being ODL and face-to-face, and the effects of these practices on students and lecturers must be measured. In distance learning, knowledge and interactive technologies as well as the ability of faculty members and students to use these interactive technologies are important (Karaduman & Mencet, 2013). The focus on a methodology for distance education usually becomes a focus on technology.

Open distance learning is now largely available in most parts of the world and many working adults choose ODL to obtain qualifications. With the competing priorities of work, home and school, adults everywhere desire education with a high degree of flexibility and accessibility. The structure of ODL provides students with the greatest flexibility. It gives them control over the time, place and pace of their education. However, learning from a distance is not without challenges (Dzakiria, Kasim, Mohamed, & Christopher, 2013).

The main task of any ODL provider is to design an educational experience that encourages learning. Open distance learning institutions and providers need to consider many factors to overcome different barriers and to implement ODL programmes effectively and efficiently. One factor that affects students' success in ODL is the extent of learning communications and interactivity made available to them (Dzakiria et al., 2013).

As students in an ODL environment begin the work of learning, they need continuous access to lecturers, libraries and other student resources. Students should have adequate access to resources appropriate to support their learning. The education institution should assess the students' ability to succeed in online learning (Tomei, 2008).

The students in this study are encouraged by the university to interact online via the discussion forum and e-mail to facilitate teaching and learning. Balaji (2010) indicated that the use of an online discussion forum has emerged as a common tool and an effective way of engaging students in pedagogical discussion outside the classroom. Although the university gives HSM students the opportunity to interact in these ways, most of them, however, do not interact online or interact minimally online through the discussion forum. Many distance education technologies are employed to overcome the shortcomings of traditional education systems, but this approach has proven to be ineffective due to the paradigm differences between traditional classroom teaching and distance education systems (Altunisik, 2013). Failure might be attributed to lecturers' and students' poor utilisation of online interactive tools to facilitate teaching and learning. It should be borne in mind that as the developments in educational technology continue to advance, the way in which we deliver and receive knowledge in both the traditional and online classroom will further evolve (Kentnor, 2015).

Most ODL institutions expect students to interact mainly by means of their prescribed online technological tools in order to learn successfully and achieve the intended outcome. Students are expected to actively interact online with other students, lecturers, the university, the content and the study material to succeed academically. The ODL institution prescribes the discussion forum as a link for online interactivity among students and between the student and the lecturer. Lecturers and university administration personnel post information on the discussion forum webpage, and students are encouraged to form study groups and are reminded to do their assignments to facilitate learning. Activities in the discussion forums further help students to share their knowledge and learn from one another. However, setting up discussion forums does not ensure that students will actively interact with each other (Nandi, Chang, & Balbo, 2009).

Although academic institutions have invested substantial resources in online interactive learning technologies, the benefits of such a system will not be realised if students fail to use it effectively or if the system is not user-friendly (Lin, 2007).

Wiid (2013) writes that today's student is more informed and technologically savvy than any students in the past. With advances in technology measured in days and not years, students become more and more technologically advanced. However, this does not seem true of HSM students as most of them interact minimally online and do not utilise online interactive tools effectively, which are reasons for major concern. The aim of this article is therefore to determine the extent to which the discussion forum as an online interactive tool is used by HSM students for student-to-student, student-to-lecturer, student-to-study materials and student-to-ODL institution communication. HSM students are qualified professional nurses. They are mostly adults from around the world who have registered for an undergraduate degree in the Department of Health Studies at ODL institutions around the world.

3. Research objective

- The objective is to determine the extent to which the discussion forum is used as an online interactive tool by Health Services Management students to enhance student-to-student and student-to-lecturer interaction to facilitate online teaching and online learning.

4. Definition of key concepts

4.1. Educator

An educator is a professionally trained and suitably qualified individual giving intellectual, moral and social instruction to students as a formal and prolonged process (Reader's Digest Oxford Complete Word Finder, 1996). For the purpose of this study an educator will be referred to as an educator, which will be used interchangeably with tutor and lecturer.

4.2. Health Services Management (HSM)

Health Services Management is operationally defined as a course offered at a specific ODL institution's Department of Health Studies to prepare students to be health services leaders/managers mainly in the health care environment. The context of Healthcare Services Management refers to the global, legal, professional, ethical, corporate governance and business ownership environment in which the management of a healthcare organisation is practiced (Muller, Bezuidenhout, & Jooste, 2011).

4.3. Interactivity

Tomei (2008) describes interactivity as the "silent, critical, creative" conversation within a student's mind that is spurred on and supported by the learning environment.

4.4. Interactive learning

Interactive learning is the process of exchanging and sharing of knowledge resources conducive to innovation between innovators, its suppliers and/or its clients (Tomei, 2008).

4.5. Students

A student is a person who is learning a subject or skill (Reader's Digest Oxford Complete Word Finder, 1996). For the purpose of this study, the student referred to will be a registered nurse who is a second or third-year undergraduate in HSM at a specific ODL institution and who has been exposed to online learning in an open distance environment. In this study "students" and "a student" will be used interchangeably.

4.6. Open distance learning (ODL)

A multi-dimensional concept is aimed at bridging the time, geographical, economic, social, educational and interactive distance between student and institution, student and educator, student and courseware, and student and peers. It focuses on removing barriers to access learning, flexibility of learning provision, student-centeredness, supporting students and constructing learning programmes with the expectation that students can succeed (UNISA, 2008).

4.7. Discussion forum

It is operationally referred to as a platform that is prescribed by the researched ODL institution to facilitate online interactivity between the students and the lecturer in order to enhance online teaching and online learning.

4.8. Research method and design

4.8.1. Design
The design is quantitative and descriptive in nature. A cross-sectional survey was used to determine the extent to which the discussion forum is used as an online interactive tool by Health Services Management students to enhance student-to-student and student-to-lecturer interactivity in order to facilitate online teaching and online learning. The design was descriptive because the information was collected from the population of interest and descriptive measures were used (Bowling, 2009).

4.8.2. Population
The population consisted of 410 registered second and third-year HSM students globally who were registered at a specific ODL institution in South Africa during the second semester. The population would be able to address the research questions because they had experienced the online interactivity phenomenon during their previous year of study.

4.8.3. Sampling method
No sampling was done; rather, a census was used because the sampling frame was manageable for data collection since data was collected online by using an online questionnaire. The online questionnaire was sent to all second and third-year students who had registered for the second semester during the year 2012. A request by the researcher was that only those students who communicate online should respond and complete the questionnaire in order to get valid data based on the objective.

4.8.4. Data collection method

Data was collected in September 2012. Before data was collected, permission to conduct the study was obtained from the Higher Degrees Committee of the Department of Health Studies of the researched ODL institution. The ethical clearance approval reference number was 0567-237-6. Data was collected through the self-developed and pre-tested online questionnaire. The questionnaire was pre-tested before the actual main data was collected to determine its validity. It was administered face-to-face with the respondents and six respondents participated. The respondents were requested not to participate to the main study.

The online questionnaire comprised demographic data and both close-ended questions (being the Likert scale and frequency of use of online interactive tools) and open-ended questions. The information was needed in order to know more about the students' online interactivity by using online interactive tools in order to enhance their teaching and learning in an ODL environment. In order to improve the use of online interactive tools to facilitate teaching and learning, the students were asked to determine the nature of online interaction between them and the lecturers.

The questionnaire was developed in English. Its development was based on the researcher's knowledge, observation, the literature review and information of data collection of the sample of previous phases. The total number of questions was 69: 11 questions were on the demographic data, 50 were close-ended questions and 8 were open-ended questions.

An instruction was given on the first page of the questionnaire that only students who interact online in an ODL setting to enhance online teaching and learning should respond to the questionnaire. The reason for giving this instruction was in order to give the researcher valid and required information that was based on the objective.

The request for the completion of the questionnaire included a request that the informed consent form be completed. Assurance was given that anonymity and confidentiality would be maintained by using codes rather than the respondents' identifiers such as their names and student numbers. Names and student numbers were removed from the completed questionnaire. Furthermore, assurance was given that involvement in the study was voluntary and that failure to comply would not result in any form of penalty.

Since it was made available online, there was no need to determine the number of questionnaires posted. The aim was to reach the maximum of 410 intended respondents, although a minimum of 60 respondents was also applicable to the quantitative approach.

The self-assessment link on the website of the researched ODL institution was utilised for posting the questionnaire to the chosen registered second and third-year HSM students around the world during the second semester. Respondents were requested to submit their responses within 16 days to give them enough time to complete the questionnaires. Respondents were informed about the questionnaire via text messages (SMSs) immediately after it had been published. A reminder was sent to students via SMS to request the return of completed questionnaires on the due date. Eighty seven questionnaires were returned: 51 were completed by second-year students and 36 by third-year students. For data analysis purposes a code was allocated to each returned questionnaire.

4.9. Data analysis

A statistician assisted the researcher in allocating a code to each of the returned questionnaires with version 39 of the Statistical Analysis System. The results were presented in figures.

5. Results

Data analysis was done quantitatively and descriptively and was presented in the form of tables and diagrams.

- Computer and cell phone ownership

The results indicated that 84.9% of the students own computers (refer to Fig. 1) and 100% own cellular phones, but only 3.8% of the students participated in the online discussion forum. Although many of the students own cell phones, the majority of them did not use these cell phone for teaching and learning; only 30 (34.9%) of the respondents communicate with peers on a monthly basis. Computers and cell phones with internet access allow students access to the discussion forum on the website of an ODL institution. Ownership of a cell phone or computer does not necessarily mean that a student has access to the discussion forum. It is suggested that students should be asked what type of cell phone they have and whether they have access to the internet to determine whether they have access to the discussion forum. Findings indicated that cell phone ownership gives the impression that the message sent via SMS by the lecturer reaches large numbers of students. Of the total number of respondents (n = 86), only 26 (30.1%) utilised the discussion forum adequately.

- Support for students' communication

Fig. 2 showed that 28 (33%) of the respondents confirm that they do get support from their peers when they interact online; 22 (25.9%) indicate that they get support from their
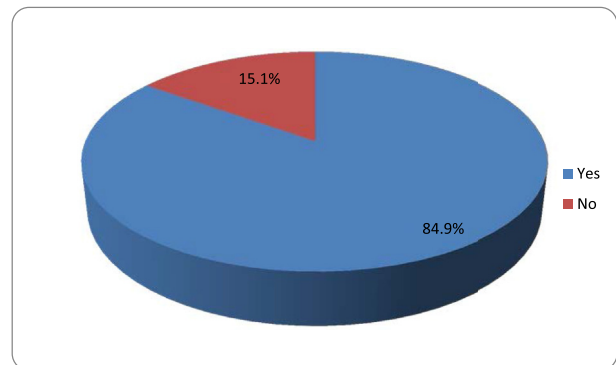

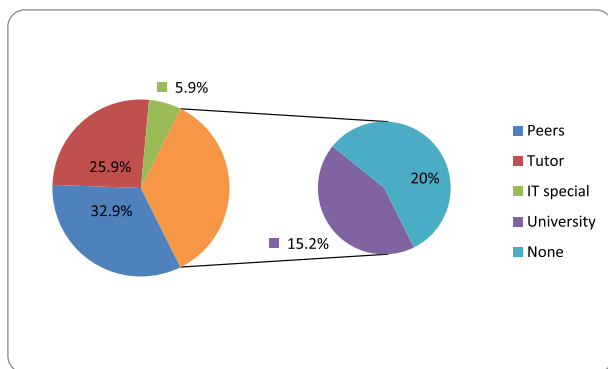**Fig. 1 — Distribution of students by computer ownership (N = 86).**

Fig. 2 – Support for students' online interaction (N = 85).

lecturers; and 17 (20%) of the respondents indicate that they get no support from lecturers and fellow students when they interact online. The findings indicate that students also need lecturer support when they interact online.

- Use of discussion forum, self-assessment and looking for study materials

The study revealed that 54 (63.9%) of the respondents do not use the self-assessment tool on the website of the researched ODL institution. This implies that students might be satisfied with the information they obtain from other sources and do not doubt their knowledge; hence they feel that there is no need to use the self-assessment tool on the website. The majority of the students, namely 44 (51.2%), read the discussion forum. The implication is that students have access to the discussion forum link, but not to other links such as the self-assessment tool and study material.

- How good are students at using the discussion forum and study material?

Fig. 3 revealed that, of the total number of respondents (n = 86), only 26 (30.1%) are good at using the discussion forum; 30 (34.5%) and 21 (24.4%) are good at accessing study materials online. This is questionable, because 44 (51.2%) of the respondents have previously indicated that they read the discussion forum. Maybe a better question would have been
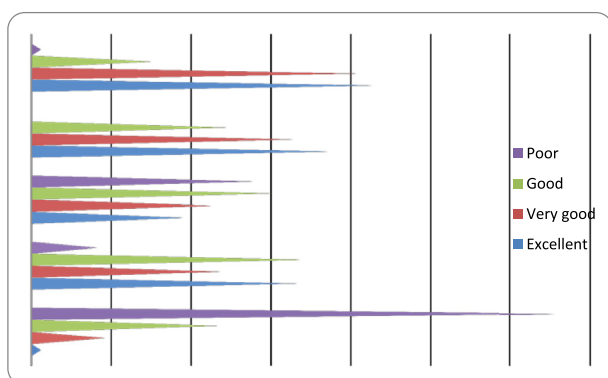

Fig. 3 – Students' use of discussion forum (N = 86).

why online tools are underutilised. This is a limitation of the study.

- Students' opinions of whether the online discussion forum allows them to study with their peers (N = 86)

Thirty four (39.5%) of the respondents agree that the online discussion forum allows them to study with their peers; 28 (32.5%) strongly agree; and 17 (19.8%) are unsure whether the online discussion forum allows them to study with their peers. Only 7 (8.1%) of the respondents disagree.

6.   Discussion

These results suggest that there is a high probability that students might interact online, as the computer and smart phone are the key devices that enable them to access the online interactive tool. The results of cell phone ownership give the impression that the SMS sent by the lecturer reaches large numbers of students. Ownership and utilisation of cell phones by students might be more related to social interactivity than to academic communication. The majority of students do not use online interactive tools effectively: as indicated, only 3.8% participate in the online discussion forum. Some respondents indicate that they struggle to use technology. University systems are often offline, especially during the registration period and when assignments have to be submitted. Barbera and Linder-VanBerschot (2011) stated that an online lecturer must be resourceful in guiding students through the learning process and must lead them to other people who can provide support (such as the university technical support team).

Thirty three percent (33%) of the respondents confirm that they do get support from their peers when interacting online, while 22 (25.9%) indicate that they get support from their lecturers. The findings indicate that students receive less support from lecturers when they interact online. Students need lecturers' support when they interact online, but lecturers interact minimally online and they are not supportive. Van Rooyen (2015) stated that online student support is frequently used by distance education institutions worldwide, but in South Africa it remains a challenge to lecturers as not all students have access to or can afford to use the internet regularly. Lecturers should nevertheless motivate them to use the discussion forum, and emphasise that the discussion forum is aimed at improving teaching and learning.

They must introduce students to the discussion forum. The social role of the lecturer includes behaviour related to influencing students' relationships with lecturers and with other students. Social role tasks include managing cooperative communications among students. This could be done through synchronous activities such as live lessons, exchanges of didactical methodologies among lecturers, and interaction in the virtual environment (Alvarez, Guasch, & Espasa, 2009).

Furthermore, in order to encourage students to participate in online discussion forums, lecturers should prompt students to respond to their questions. An online discussion forum for learning communities can provide students with open and

equal discussion opportunities. The interactivity between lecturers and students is indispensable for online learning (Chang, Chen, & Hsu, 2011).

The discussion process is a critical dimension of the leaning process. The lecturer should preferably spend his or her time preparing materials, carefully thought out discussion questions and topics that relate to the learning objectives. The ultimate goal of taking the time to develop an asynchronous discussion forum and manage it in the appropriate manner is to create an online learning community that will achieve high levels of learning (Andresen, 2009).

It would be meaningless to support student interactivity in the discussion forum if the issues of teaching and learning are not addressed. Institutional student support involves administrators who must also step in to assist students in solving technological challenges. They should ensure that the system is never offline during peak times, such as during the registration period and when assignments must be submitted. In this way they can influence the student's online learning experience positively (Moore & Kearsley, 2012).

The majority of the students, namely 44 (51.2%), read the discussion forum. The implication is that students have access to the discussion forum link, but not to other links such as the self-assessment tool and study material. Of the total number of respondents (n = 86), only 26 (30.1%) are good at using the discussion forum; 30 (34.5%) and 21 (24.4%) are good at accessing study materials. This is questionable, because 44 (51.2%) of the respondents previously indicated that they read the discussion forum. The majority of the students do not use online interactive tools effectively: as indicated, only 3.8% participate in the online discussion forum. Some respondents indicate that they struggle to use technology. The researcher nevertheless suggests that intensive mentoring of students who struggle with the use of technology should be considered.

- Validity and reliability

The questionnaire was pre-tested before the actual main data was collected to determine its validity and reliability. Thus each targeted respondent completed the questionnaire in order to measure its accuracy and consistency. It was administered face-to-face to the respondents and six respondents participated. The respondents were requested not to participate in the main study. In order to ensure content validity before conducting the main study, the developed questionnaire was reviewed by the statistician, three promoters who are also research experts and one of whom was an expert in ODL, as well as an information technology specialist. External validity was ensured by generalising the findings to all Health Services Management students in the researched ODL institution. Furthermore, for reliability purposes, data was analysed through the assistance of the statistician and coded using Statistical Analysis System (SAS) version 39 in Social Sciences.

6.1. Limitation of the study

It could have been better if the study was focused on all the students in the department as it would give a clearer understanding of students' utilisation of the online interactive tools.

6.2. Recommendations

It is highly recommended that students be mentored extensively regarding the utilisation of online technological tools by the institution to enhance teaching and learning in an ODL context. They should further be supported by the lecturers and the university. It is recommended that future studies be conducted on all health studies students.

7. Conclusion

The results showed that 28 (33%) of the respondents confirmed that they do get support from their peers when they interact online and 22 (25.9%) indicated that they get support from their lecturers. Based on the results, Health Services Management students in an ODL institution need more support from the lecturers in order to participate in a discussion forum. Lecturers must be made aware of students' need for support. ODL institutions should teach students how to use online interactive tools to facilitate their teaching and learning, and consider providing intensive mentoring to students to enable them to utilise the available technologies optimally. The article suggests that the lecturer's active participation in an online discussion forum as a way of supporting students is fundamental to effective learning and teaching.

Acknowledgements

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